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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/732,891	12/11/2000	Kimio Hagi	50090-250	2930

7590 12/26/2003  
McDermott, Will & Emery  
600 13th Street, N.W.  
Washington, DC 20005-3096

EXAMINER

BENENSON, BORIS

ART UNIT	PAPER NUMBER
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2836

DATE MAILED: 12/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/732,891	<b>Applicant(s)</b> HAGI, KIMIO	
	<b>Examiner</b> Boris Benenson	<b>Art Unit</b> 2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 2-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2 and 5-8 is/are allowed.
- 6) ☒ Claim(s) 3,4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some    c) ☐ None of:  
         1. ☒ Certified copies of the priority documents have been received.  
         2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
     \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
     a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

***Response to the arguments***

1. Applicant argues that modification Nagao et al. (6,252,758) with teachings of Brown (5,948,986) is improper, because Nagao adjusted attractive force of an electrostatic chuck as a function of a temperature change, sensed by a temperature sensor and does not suggest use a reading of a warpage sensor on order to make such adjustment. Applicant with reference to § 2143.01 of M.P.E.P argues that such a modification will change the principle of operation and therefore is not admissible. Such arguments are not persuasive because they are based on narrow interpretation of Nagao teachings. Nagao et al. teach to adjust voltage applied to an electrostatic chuck assembly during a process of manufacturing a semiconductor based on a reading of a temperature sensor. It will not constitute change in basic principle of operation if such adjustment will be done based on a reading of different type of the sensor. Therefore the arguments are not convincing.

2. Applicant also argues that Nagao does not specifically advocate *only* stepwise control of the applied voltage. The argument is not convincing, because Nagao disclose "applying a stepwise or continuously increasing voltage" (Col. 2, Lines 33-

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34) which can be implemented differently in different embodiments.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this

Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagao et al. (6,252,758) in view of Brown (5,948,986). Nagao et al. disclose an electrostatic chuck system (Fig.5) comprising: an electrostatic chuck having an electrode (15), a power supply (6,10) for applying a voltage to the electrode and a voltage control system (8) for contemporaneously controlling applied voltage in response to a signal from thermocouple (11) read on sensor. Nagao disclosed applying voltage a stepwise or continuously increasing voltage. Nagao does not disclose a warpage sensor or distance sensor. Brown teaches the importance in an electrostatic to have a warpage/distance sensor wherein a signal from the sensor is input to a voltage control section to control the applied

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voltage (Col.3, Lines 19-48). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified an electrostatic chuck system of Nagao et al. and include a warpage/distance sensor according to teaching of Brown, because it will allow to adjust an electrostatic force to level necessary for processing warped or bowed wafers.

***Allowable Subject Matter***

4. Claims 2 and 5-8 are allowed.

**The following is an examiner's statement of reasons for allowance:**

5. Independent Claim 6 is allowable because none of the prior art of record disclose an electrostatic chuck system wherein the applied voltage is controlled such that a rate at which the temperature change of the semiconductor substrate falls with a range of 1-150 °C/sec in combination with the other claim limitations.

6. Claims 2, 5, 7 and 8 are dependent on allowable Claim 6 and therefore allowable.

**This Action is made Final.**

**Contact information**

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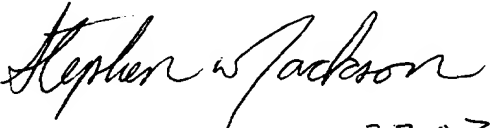
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Boris Benenson whose telephone number is (703) 305-6917. After 1/28/2004 telephone number will be changed to (571) 272-2048. The examiner can normally be reached on M-F (8:20-6:00) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (703) 308-3119. After 1/28/2004 telephone number will be changed to (571) 272-2058. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Boris Benenson  
Examiner  
Art Unit 2836

B.B.

  
12-23-03

STEPHEN W. JACKSON  
PRIMARY EXAMINER